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Before the
Federal Communications Commission
Washington, D.C. 20554

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In the Matter of	)	
	)	
Comment Sought On Healthcare	)	
Delivery Elements of National	)	GN Docket Nos. 09-47, 09-51, 09-137
Broadband Plan- NBP Public	)	WC Docket No. 02-60
Notice # 17	)	
	)	

To: The Commission

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COMMENTS OF HARRIS CORPORATION
NBP PUBLIC NOTICE # 17

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This comment is submitted on behalf of Harris Corporation ("Harris") before the Federal

Communications Commission ("Commission") in response to the Commission's Public Notice[1]

seeking comment on healthcare delivery elements of the National Broadband Plan. Harris is an

international communications and information technology company serving government and

commercial markets in more than 150 countries. Harris Healthcare Solutions, a business unit of

Harris, provides enterprise intelligence solutions and services for commercial and government

customers, including intelligent infrastructure, advanced imaging and collaboration, systems

integration, security, and privacy. Some major projects Harris Healthcare Solutions is involved

with include being the prime contractor for the United States Department of Health and Human

Services' ("HHS") Nationwide Health Information Network ("NHIN") CONNECT Gateway

project, partnering in the development of the United States Department of Defense Military

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[1] *See* Comments Sought on Healthcare Delivery Elements of National Broadband Plan, *National Broadband Plan Public Notice Number 17*, GN Docket Nos. 09-47, 09-51, 09-137 and WC Docket No. 02-60, DA 09-2413 (rel. Nov. 12, 2009) ("*NBP Public Notice 17*").

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Health System's global Healthcare Artifact and Image Management Solution (HAIMS), and delivering on a 10 year contract awarded by Health First, a Florida-based, not-for-profit healthcare provider, to provide network management and IT services for their enterprise-wide operations. Harris Healthcare Solutions has also played a vital role in coordinating emergency response efforts, such as during Hurricane Katrina, and has been involved with health IT standard setting efforts.

The Commission has requested comment on a number of issues to encourage and facilitate ubiquitous broadband coverage and access across the healthcare industry. In order to accomplish this end, Harris submits four recommendations. First, the Commission should commit to working with government stakeholders and other interested public and private sector parties on producing a comprehensive series of studies to better understand the gaps and strengths of current health IT infrastructure. Second, the Commission should aim to understand the type of connectivity needed to support health IT services based on specific application requirements. Third, in order to drive innovation within the health IT industry and adoption of health IT solutions, the Commission must include the needs of the healthcare community into its spectrum planning. In doing so, the Commission must examine ways to leverage the common spectrum needs of the healthcare industry and other sectors. Fourth, the Commission must take into account the unique security challenges of the healthcare sector by balancing the privacy concerns of patients with the access needs of providers.

Availability and affordability of broadband is critical to the success of almost every healthcare innovation being worked on today. Access to broadband impacts almost every player participating in the healthcare value chain including patients, researchers, doctors, payers, hospitals, laboratories, emergency responders, and the list goes on. The results of the

Commission's National Broadband Plan has the potential to not only provide a large percentage of currently unserved and underserved population access to high quality health care, but also play a major role in reducing the overall cost of healthcare in the United States.

I.   A Comprehensive Series of Studies Must Be Undertaken In Order To Better Understand the Gaps and Strengths of Existing Health IT Infrastructure.

Availability of reliable broadband infrastructure is key to encouraging adoption and successful implementation of emerging health IT solutions. Providing broadband access to healthcare providers and patients will significantly affect the cost and quality of healthcare for the better. However, before such promises of health IT can be realized, there must be a baseline understanding of the gaps and strengths of existing healthcare infrastructure and the needs of each entity within the healthcare value chain.

The Commission properly recognizes that "the current state of internet connectivity is necessary to understand the extent of the gaps in current connectivity."[2] While the Commission's Public Notice attempts to collect information to better understand the healthcare ecosystem, a 22 day comment period is not enough time for the Commission to fully understand where all the connectivity gaps and strengths in healthcare landscape lie. As part of the National Broadband Plan, the Commission must commit to working with government stakeholders and other interested public and private sector parties to undertake a series of comprehensive studies, divided by common healthcare delivery settings, that examine: (1) the different tiers of broadband infrastructure required by healthcare providers and patients; (2) the extent that broadband infrastructure is currently in place within the healthcare ecosystem; (3) where the gaps and strengths within the existing broadband infrastructure lie; and (4) how to establish a

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[2] Id., at 2.

process for continuing to collect information in order to ensure the infrastructure and bandwidth

needs of everyone in the healthcare ecosystem, both present and future, are met.

While the Commission has largely been left to collect healthcare delivery information on

its own, in the area of emergency medical communications there is a baseline understanding of

existing healthcare infrastructure and service gaps. In February 2008, the Joint Advisory

Committee on Communications Capabilities of Emergency Medical and Public Healthcare

Facilities ("JAC") issued a report examining "the communications capabilities and needs of

emergency medical and public health care facilities."[3] The JAC was commissioned by Congress

in response to the recommendations of 9/11 Commission.   The JAC was charged with collecting

a lot of similar information currently being sought by the Commission as part of the National

Broadband Plan.

> (2) Duties—The joint advisory committee shall:
>
> (A) assess specific communications capabilities and needs of emergency medical
> and public health care facilities, including the improvement of basic voice, data,
> and broadband capabilities;
>
> (B) assess options to accommodate growth of basic emerging communications
> services used by emergency medical and public healthcare facilitates;
>
> (C) assess options to improve integration of communications systems used by
> emergency medical and public health care facilities with existing or future
> emergency communication networks.[4]

In its report, the JAC specifically noted the importance of broadband communications in

providing emergency medical care noting that:

> Modern broadband communications networks and applications present an
> enormous opportunity to radically improve the manner in which emergency

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[3] Joint Advisory Committee on Communications Capabilities of Emergency Medical and Public Health Care
Facilities, *Report to Congress*, p., 4 (Feb. 4, 2008) *available* at http://www.fcc.gov/pshs/advisory/jac/ ("*JAC
Report*").

[4] *Implementing Recommendations of the 9/11 Commission Act of 2007*, Pub. L. No. 110–53, § 2201(c), 121 Stat.
266, 540-541 (2007).

information is shared by health officials. Broadband services enable bandwidth intensive information such as video, pictures and graphics to be transmitted faster in a more reliable and secure manner. When married with wireless technology, broadband enables the real-time, reliable transmission of bandwidth intensive information in a mobile environment.[5]

It is a modern-managed Internet Protocol ("IP") based network that the JAC appropriately recognized would enable seamless communications, promote a transition to modern next generation services, and improve integration of communications systems amongst first responder and public health facilities.[6]

Other than the JAC report, Harris is unaware of any comprehensive study of healthcare infrastructure and connectivity, specifically within the areas the Commission seeks comment.[7] As part of the National Broadband Plan, when evaluating the infrastructure gaps and strengths of emergency medical responders, the Commission must take into account the recommendations of the JAC report.[8] In addition, the Commission should use the JAC report as a model for the comprehensive series of healthcare delivery infrastructure studies recommended by Harris in these comments.

II.   The Type of Connectivity Needed To Support Health IT Services Must Be Understood Based On Application Requirements.

One of the biggest challenges facing the Commission is to determine the connectivity needs required by specific healthcare providers and users. There are disparate communication infrastructure and connectivity needs within healthcare ecosystem. There is no one size fits all

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[5] JAC Report, *supra* note 3, at p. 2.

[6] Attachment A depicts how an IP based network can be used to tie together various emergency medical services. The graphic was published in the JAC report and provided by Harris Corporation. *See* Id., at 43.

[7] The Commission specifically seeks comment on healthcare delivery in the following settings: hospitals, community health clinics and outpatient centers, physician offices, long-term are facilities, home, emergency medical responders and Indian Health Service, Department of Health and Human Services and other health service providers on tribal lands. NBP Public Notice #17, *supra* note 1, at 2.

[8] *See* JAC Report, *supra* note 3, at 3-4 (setting forth the recommendations and conclusions of the JAC).

solution. For example, radiologists need to receive, view, and analyze diagnostic quality images that can be accessed from various locations, including their private offices or homes; emergency rooms need to be able to receive vital signs, video feeds from a remote locations, and have video conference capabilities; primary care physicians need access to referential quality images and the ability to receive and examine laboratory results; and disease management service providers need to be able to receive vital signs from multiple devices and multiple geographical locations at the same time, and be able to transmit information in multiple formats including text, audio, and video. The needs of the healthcare industry must be understood on an application level, which is what ultimately influences the type of connectivity and infrastructure necessary to support health IT solutions.   Below, Harris provides two examples of how the broadband connectivity and infrastructure needs of healthcare applications differ.

In today's transient and mobile society, global access to stored medical images and documents is crucial to better patient care. It is particularly important to patients who have had testing and treatment at multiple locations. The NHIN, which by in large rides over the Public Internet, will enable federal healthcare agencies, including the Military Health System, Department of Veterans Affairs, Social Security Administration, Indian Health Service, National Cancer Institute, Centers for Disease Control, other Federal entities, and private healthcare service providers, to exchange patient information seamlessly with security and privacy while improving the quality of care and reducing costs. Bandwidth requirements over the CONNECT Solution will vary based on the type of information being transmitted. For purposes of transferring basic text files, such as a Continuity of Care Document—on average 10 kilobytes in

size—speeds of 2.68 megabytes per second ("Mbps") have proven sufficient to complete a successful transfer.[9]

In contrast, digital pathology has more robust connectivity requirements than the Public Internet can currently accommodate. Virtual digital pathology allows pathologists to view and manipulate images, annotate the images with digital notes, and delineate special areas of interest on the sample, such as a cluster of tumor cells, as if they were looking through a microscope at the actual slides. By accessing a local or wide area network, multiple pathologists can view, pan across, and zoom into digital images without any delay or latency, hence augmenting the diagnostic process and mitigating the probability that the one of a kind pathology samples will be lost or damaged. However, unlike the current requirements of the NHIN, pathologists need to examine very large images—an average of 20 gigabytes in size—over a large distance, at speeds starting at 54 Mbps.

While the connectivity requirements enabling the NHIN and digital pathology may differ, the benefits of both are similar. Through broadband the NHIN CONNECT will enable the virtualization of care. Medical images and documents can be linked to a patient's electronic medical record, quickly located, and shared online for viewing and collaboration at multiple sites. Through broadband pathologists can be provided the same seamless viewing experience as they would have with a microscope. Virtual pathology could meet the increasing demand for pathology services and overcome the challenge posed by a shortage of highly qualified pathologists. Bottom-line, nationwide access to reliable broadband infrastructure will not only impact how healthcare is delivered, but significantly reduce healthcare costs and increase the availability of high quality healthcare services.

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[9] However, as utilization of the NHIN develops, faster speeds will be needed to facilitate the transfer of more complex data files, audio, or images.

III. **The Commission Must Commit To Including Health IT In Its Spectrum Planning and Examine How To Meet Health IT Spectrum Needs By Leveraging Common Denominators With Other Sectors.**

Access to spectrum is a primary barrier to the adoption of health IT applications. In order to spur innovation within the health IT industry and encourage the adoption of health IT solutions, the Commission must take into consideration the spectrum needs of the healthcare industry in future spectrum planning. In a letter recently submitted to the Commission, the American Hospital Association highlighted the importance of designating and protecting radio frequencies for use by health IT solutions.[10] During the spectrum planning process the Commission should specifically examine how the spectrum needs of other sectors can be leveraged alongside the needs of the healthcare industry.

In previous comments submitted in the National Broadband Plan proceeding, Harris has recommended that the Commission examine ways to leverage the D-Block (758 MHz to 763 MHz and 788 MHz to 793 MHz) and 700 MHz public safety broadband spectrum (763 MHz to 768 MHz and 793 MHz to 798 MHz) to facilitate broadband access to public safety, utilities, and rural communities.[11] Harris believes that the aforementioned 700 MHz spectrum could also be leveraged to meet the needs of healthcare providers and users in rural areas. Like public safety and utilities, citizens need access to healthcare without regard to their location. When it comes to general broadband access, rural communities do not have sufficient leverage and/or funding to obtain the same level of broadband access available to more densely populated communities. As

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[10] Letter of the American Hospital Association, In the Matter of Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, PS Docket No. 06-229 (filed Nov. 3, 2009).

[11] *See* Ex Parte Notice of Harris Corporation, In the Matter of a National Broadband for Our Future; Implementing a Nationwide, Broadband, Interoperable Public Safety Network in the 700 MHz Band, GN Docket Nos. 09-51, 09-47, 09-137, PS Docket No. 06-229 and WT Docket No. 06-150 (filed Oct. 19, 2009); *see also* Comments of Harris Corporation, In the Matter of a National Broadband for Our Future, National Broadband Plan Public Notice # 8, GN Docket Nos. 09-51, 09-47, 09-137, CC Docket No. 94-102, WT Docket No. 06-150, WC Docket No. 05-196, 3-5 (filed Nov. 12, 2009).

a result, healthcare providers and users may find it challenging and expensive to reach many rural communities. Outlined below are steps the Commission can take through the National Broadband Plan to provide ubiquitous rural broadband access by leveraging the needs of public safety, utilities, unserved and underserved communities, and the healthcare industry.

1. The Commission must provide nationwide public safety broadband capability by:

   - Combining the D-Block and public safety broadband block (hereinafter referred to as the "D+PS Block").

   - Allowing for regional build-out.

   - Allowing regional optimization of the D+PS Block.

   - Leveraging existing Regional Planning Committee's framework.

   - Maintaining a technology neutrality policy.

   - Requiring a nationwide interoperability mode of operation.

2. The Commission should establish a communications capability that can support a North American electric system by:

   - Facilitating the wireless component of the Smart Grid.

   - Allowing utilities access to D+PS Block.

   - Collaborating with NTIA to provide utilities access to 1.8 GHz spectrum.

3. The Commission can drive the use and adoption of health IT applications by:

   - Providing healthcare providers and users access D+PS Block.

   - Including the needs of healthcare in spectrum planning.

   - Undertaking comprehensive studies to understand the infrastructure gaps and strengths in the healthcare ecosystem.

4. The Commission should facilitate broadband access for all communities in rural unserved and underserved areas by:

   - Using spectrum in the D+PS Block to provide broadband access in underserved and unserved communities. However, when providing general broadband access the Commission should establish rules to provide priority access for public safety and other mission critical communications.

IV.   The National Broadband Plan Should Take Into Account Unique Security Challenges Faced by the Healthcare Industry, Where It Is Critical To Balance the Privacy Concerns of Patients With the Access Needs of Providers.

Unlike many data security regimes, security in the healthcare industry is unique. Usually data security is focused on protecting individual users from intruders. The user wants their data protected, while providing themselves unencumbered access. However, in healthcare multiple parties, including patients, physicians, specialists, and emergency responders, must have varying levels of access to the same data. This provides a distinctive challenge that requires a delicate balancing of patients' desire for privacy and providers' need for access.

While protecting patient information must be the top priority, health IT solutions and policies must provide the ability for multiple parties to access the right data, at the right time, while simultaneously protecting data from hackers and unauthorized users. The balance between privacy and access can be struck by allowing information to be controlled by the patient. Providing patients the ability to control their own information will ease privacy concerns and encourage widespread adoption of health IT amongst patients. In turn, patient's trust in the system will only increase providers' ability to obtain access to all needed patient information.

V.   Conclusion.

There are innovative solutions being developed everyday to improve the quality of healthcare. However, a major percentage of the country will not be able to benefit from these innovations if there is not appropriate communications infrastructure in place. Through the National Broadband Plan the Commission has the opportunity to lay the groundwork to provide the entire country the opportunity to benefit from enhanced technological innovations being developed and implemented in the healthcare industry.

Respectfully submitted,

HARRIS CORPORATION

_____/s/_____

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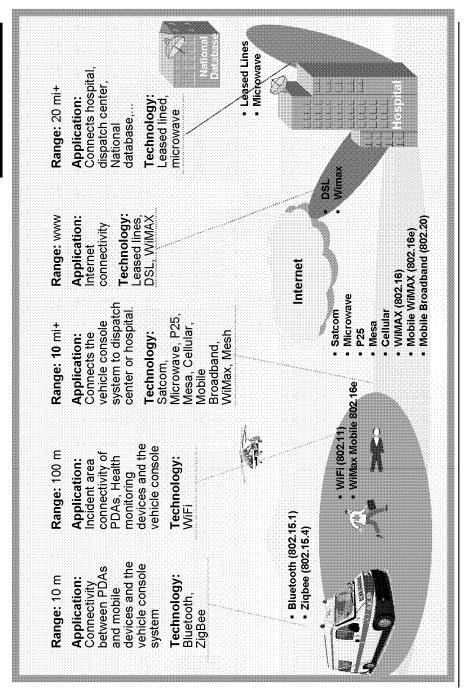Suite 850E
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ATTACHMENT A

Emergency Medical Services

HARRIS

Range: 10 m

Application:
Connectivity
between PDAs
and mobile
devices and the
vehicle console
system

Technology:
Bluetooth,
ZigBee

Range: 100 m

Application:
Incident area
connectivity of
PDAs, Health
monitoring
devices and the
vehicle console

Technology:
WiFi

Range: 10 mi+

Application:
Connects the
vehicle console
system to dispatch
center or hospital.

Technology:
Satcom,
Microwave, P25,
Mesa, Cellular,
Mobile
Broadband,
WiMax Mesh

Range: www

Application:
Internet
connectivity

Technology:
Leased lines,
DSL, WiMAX

Range: 20 mi+

Application:
Connects hospital,
dispatch center,
National
database,...

Technology:
Leased lined,
microwave

- Bluetooth (802.15.1)
- Zigbee (802.15.4)

- WiFi (802.11)
- WiMax Mobile 802.16e

- Satcom
- Microwave
- P25
- Mesa
- Cellular
- WiMAX (802.16)
- Mobile WiMAX (802.16e)
- Mobile Broadband (802.20)

Internet

- DSL
- Wimax

- Leased Lines
- Microwave

National Database

Hospital

3-Dec-09